CLAIMS

What is claimed is:

1. A system for use by a supermarket, the system comprising:

a first display case including a first controlled environmental space that is adapted to maintain products, the first controlled environmental space having a first varying and measurable parameter, and a first sensor coupled to the first environmental space, the first sensor sensing the first parameter and generating a first signal including a first parameter level;

a second display case including a second controlled environmental space that is adapted to maintain products, the second controlled environmental space having a second varying and measurable parameter, and a second sensor coupled to the second environmental space, the second sensor sensing the second parameter and generating a second signal including a second parameter level;

a processor and memory in communication with the first and second display cases, the memory including a first predetermined parameter value associated with the first sensor, a second predetermined parameter value associated with the second sensor, a first set of message strings associated with the first predetermined parameter value, a second set of message strings associated with the second predetermined parameter value, and software instructions executable by the processor to

configure the processor to receive the first and second signals,

receive the first and second predetermined parameter values,

compare the first parameter level with the first predetermined parameter value,

responsive to a relationship between the first parameter level and the first predetermined parameter value, retrieve at least a first message string from the first set of message strings,

encode a message including the first message string.

2. A system as set forth in claim 1 wherein the software instructions are further executable by the processor to

compare the second parameter level with the second predetermined parameter value,

responsive to a relationship between the second parameter level and the second predetermined parameter value, retrieve at least a second message string from the first and second message strings, and

further encode the message including the second message string.

3. A system as set forth in claim 1 wherein the software instructions are further executable by the processor to

compare the second parameter level with the second predetermined parameter value,

responsive to a relationship between the second parameter level and the second predetermined parameter value, retrieve at least a second message string from the first and second message strings, and

encode a second message including the second message string.

4. A system as set forth in claim 1 wherein the first predetermined parameter value is associated with at least one of product safety and product quality.

5. A system as set forth in claim 4 wherein the message provides instructions for correcting environmental conditions dealing with at least one of product safety and product quality.

6. The system as set forth in claim 1 wherein the memory further includes a third predetermined parameter value associated with the first sensor, and a third set of message strings associated with the third predetermined parameter value, and wherein the software instructions are further executable by the processor to

receive the third predetermined parameter value ,

compare the first parameter level with the third predetermined parameter value,

responsive to a relationship between the first parameter level and the third predetermined parameter value, retrieve at least a second message string from the third set of message strings, and

further encode the message including the second message string.

7. A system as set forth in claim 6 wherein the first varying and measurable parameter is a temperature, wherein the first predetermined parameter value is a temperature associated with product safety and wherein the third predetermined parameter value is a quality temperature associated with product quality.

8. A system as set forth in claim 1 wherein the memory further includes a third predetermined parameter value associated with the first sensor, and a third set of message strings associated with the third predetermined parameter value, and wherein the software instructions are further executable by the processor to

receive the third predetermined parameter value ,

compare the first parameter level with the third predetermined parameter value,

responsive to a relationship between the first parameter level and the third predetermined parameter value, retrieve at least a second message string from the third set of message strings, and

encode a second message including the second message string.

9. A system as set forth in claim 8 wherein the first varying and measurable parameter is a temperature, wherein the first predetermined parameter value is a temperature associated with product safety and wherein the second predetermined parameter value is a temperature associated with product quality.

10. A system as set forth in claim 1 wherein the first parameter is a temperature, and wherein the memory receives and records temperature levels associated with the first sensor.

11. A system as set forth in claim 10 wherein the software instructions are further executable by the processor to

retrieve at least one previously recorded temperature level,

processes the at least one retrieved temperature according to an algorithm to provide an algorithm value,

compare the algorithm value to a predetermined benchmark value, and

provide an alarm signal responsive to a predetermined relationship between the algorithm value and the benchmark value.

12. A system as set forth in claim 11 wherein the software instructions are further executable by the processor to

record the current time at which each temperature is recorded,

retrieve temperatures recorded within a trend interval ending with the current time, and

calculate the algorithm value as the average of the temperatures so retrieved.

13. The system of claim 1 wherein the first varying and measurable parameter level indicates the condition of a first plurality of products stored in the first environmental space and the second varying and measurable parameter level indicate the condition of a second plurality of products stored in the second environmental space.

14. A system as set forth in claim 1 wherein the memory includes a space recording a plurality of tables, each table including one or more entries, the plurality of tables comprising

a first table comprising fields recording a unique control point ID, a sensor ID, and a parameter value,

a second table having fields recording a unique sensor ID associated with a preselected sensor, and a controlled environment ID,

a third table having fields recording a unique controlled environment ID and a description message code string, and

a fourth table having fields recording a sensor ID and a control point ID.

15. A system as set forth in claim 14 wherein the first table further includes a product category ID field.

16. A system as set forth in claim 15 wherein the plurality of tables further comprises

a fifth table having a field recording a product category ID,

a sixth table having a field recording a unique corrective action type ID and a corrective action message code string, and

a seventh table having a field recording a product category ID and a corrective action type ID.

17. A system as set forth in claim 15 wherein the plurality of tables further comprises

a eighth table having fields recording a unique product category ID and a product description message code string.

18. A system for use by a supermarket, the system comprising:

a first display case including a first controlled environmental space that is adapted to maintain products, the first controlled environmental space having a first varying and measurable parameter, and a first sensor coupled to the first environmental space, the first sensor sensing the first parameter and generating a first signal including a first parameter level;

a second display case including a second controlled environmental space that is adapted to maintain products, the second controlled environmental space having a second varying and measurable parameter, and a second sensor coupled to the second environmental space, the second sensor sensing the second parameter and generating a second signal including a second parameter level;

a processor and memory in communication with the first and second display cases, the memory including a first at least two predetermined parameter values associated with the first sensor, a second at least two predetermined parameter values associated with the second sensor, a respective set of message strings associated with each predetermined parameter value, and software instructions executable by the processor to

configure the processor to receive the first and second signals,

receive at least one of the first at least two predetermined parameter values,

receive at least one of the second at least two predetermined parameter values,

compare the first parameter level with the received predetermined parameter value of the first at least two predetermined parameter values,

compare the second parameter level with the received predetermined parameter value of the second at least two predetermined parameter values,

responsive to relationships between the parameter levels and the predetermined parameter values, retrieve one or more message strings from the sets of message strings, and

encode one or more messages with the one or more retrieved message strings.

19. A system as set forth in claim 18 wherein the predetermined parameter values are associated with at least one of product safety and product quality.

20. A system as set forth in claim 19 wherein the message provides instructions for correcting environmental conditions dealing with at least one of product safety and product quality.

21. A system as set forth in claim 20 wherein the first parameter is a temperature, wherein each first predetermined parameter value is a safety temperature associated with food safety and wherein each second predetermined parameter value is a quality temperature associated with food quality.